

Notice of Allowability

Application No.

10/734,509

Examiner

Filip Zec

Applicant(s)

DAIN, JOHN F.

Art Unit

3744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the application filed on 12/12/2003.
2. ☒ The allowed claim(s) is/are 1-10.
3. ☒ The drawings filed on 12 December 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

1. The following is an examiner's statement of reasons for allowance: after detailed search performed by the examiner, the application was deemed allowable. There were several references found in the prior art, however, not one of them contained all limitations described in the claims. Moreover, there was no suggestion in any of them to provide proper motivation for combining them with each other.

U.S. Patent 5,910,167 to Reinke et al. teaches a system for distribution of liquid refrigerant in an evaporator, having a pair of spaced headers and a plurality of tubes extending between the headers to define a plurality of spaced refrigerant passages, achieved through the use of at least one refrigerant inlet within one of the headers. It does not teach the use of a liquid, gas or a transitional combination thereof, as a refrigerant, selected by the user.

U.S. Patent 6,606,882 to Gupte teaches an evaporator having a two-phase refrigerant flow distribution system with improved circulation features in the header and sub-header of the system. Both the header and the sub-header have vertically disposed, parallel pass conduits interconnected by way of a return bend, with the downstream end of the second pass conduits then fluidly interconnected with the upstream end of the first pass conduits to complete the circuit. Gupte does not teach a system having conduits in the same plane and having a user-selected menu to choose the phase of the refrigerant.

U.S. Patent 6,543,240 to Grafton teaches a system comprising an evaporator supporting means, and a novel air conditioner evaporator unit mounted upon the supporting means. This novel evaporator unit involves closely spaced first and second tubing arrays or cores, with each array being operably associated with a respective refrigerant compressor. The tubing of each

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array is formed into coils, involving a number of essentially parallel tubing runs connected by curved end members. A third tubing array is operatively positioned alongside the evaporator involving the first and second tubing arrays, with this third tubing array being adapted to carry a heated liquid on selected occasions. However, the first and second tubing arrays are interconnected by a multiplicity of fin members of thin, thermally conductive material, and in many instances, the fins are constructed so as to include the third tubing array as well. The applicant claims that the three tubing arrays are adjacent, coplanar and parallel to each other. Grafton also does not specify the user input selection ability of the presently claimed invention.

Finally, U.S. Patent 6,390,187 to Marechal et al. teaches a heat exchanger with flexible tubes made of a plastic material, designed to carry a heat-exchanging fluid capable of co-operating with an air stream circulating through the exchanger. However, the tubes are designed to be generally shaped like substantially sinusoidal lines, which differs from what is claimed by the applicant.

2. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 5,353,749 to Seibel, Robert V. et al.

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U.S. Patent 5,884,696 to Loup, Didier

U.S. Patent 3,601,186 to Clay, D. Smith et al.

U.S. Patent 5,440,894 to Schaeffer, Wayne G. et al.

U.S. Patent 5,947,195 to Sasaki, Kenichi

U.S. Patent 6,185,957 to Voss, Mark G. et al.

U.S. Patent 6,490,877 to Bash, Cullen E. et al.

U.S. Patent 4,040,268 to Howard, Webster L.

U.S. Patent 5,743,111 to Sasaki, Shunji et al.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Filip Zec whose telephone number is (703) 306-3446. The examiner can normally be reached on Monday through Friday, with the exception of every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Denise Esquivel can be reached on (703) 308-2597. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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